

As a retired Professor of Electrical Engineering and a former NASA Radio Communication Engineer, I wish to comment on the use of "temperature" as a means of measuring radio interference from Broadband Over Power Line radio transmissions. Radio Temperature is an inappropriate measure for such interference, as it is a measure of power averaged over direction. It ignores the directional properties of such interference. For instance, the average radio temperature of the entire upper hemisphere (the sky) is quite low, when measured with an omnidirectional antenna. However, the average radio temperature of the Sun can be in the millions of degrees, when measured with an antenna having a narrow beam whose width is approximately that of the angle subtended by the Sun. An associated radio receiver might not suffer much interference, when connected to an omnidirectional antenna. However, that same receiver might be badly damaged, when connected to a narrow-beam antenna, pointed at the Sun. This was discovered early-on in the Manned Space Program.

As regards BPL, a "radio temperature" specification for BPL interference is not technically sufficient, in my opinion. Standard and traditional "Field Strength" measurements are the proper ones to use, since they are directionally sensitive, and BPL radiation is directional. Any so-called "temperature" measurement that employs directional averaging, will yield a lower measure of interference than the use of Field Strength, and would therefore be misleading.